Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

291 Antibody Response to SARS CoV-2 Immunization in Patients with Immunodeficiency

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RATIONALE: Effective vaccination is imperative for protection against severe SARS-CoV-2 infection, particularly in immunodeficient populations. Unfortunately, those with immunodeficiency often mount inadequate vaccine responses. We aimed to study the immunogenicity of SARS-CoV-2 vaccines in patients with immunodeficiency.

METHODS: Sixty-two patients with immunodeficiency at our center who received the BNT162b2 (Pfizer-BioNTech), mRNA-1273 (Moderna) or Ad26.COV2.S (Janssen) SARS-CoV-2 vaccine series with SARS-CoV-2 spike antibody levels available were evaluated. SARS-CoV-2 spike antibodies were compared to healthy controls matched by age and time from vaccination at a 1:1 ratio. A subset of patients received additional mRNA vaccine dose(s). Participants with positive SARS-CoV-2 PCR or nucleocapsid antibody (if not on replacement immunoglobulin) were excluded.

RESULTS: Participants with immunodeficiency (N=62) had lower spike antibody titers than healthy controls (N=62, mean 1699 v. 3307 U/mL, p=0.02). Those with specific antibody deficiency and IgG subclass deficiency (N=8) demonstrated higher spike antibody titer compared to those with more severe immune phenotypes (N=54, 4338 v. 1308 U/mL, p=0.01). Those with switched memory B-cells <2% (N=24) had reduced odds of positive spike antibody titer (>/=100 U/mL, OR 0.09, 95%CI 0.02-0.5). An additional mRNA vaccine dose after initial series resulted in an increase in titer for most patients (59 v. 952 U/mL, p=0.05).

CONCLUSIONS: SARS-CoV-2 vaccination resulted in lower spike antibody levels in patients with immunodeficiency. Patients with severe immunodeficiency, especially those with low switched memory B-cells, had highest risk of inadequate vaccine response. An additional vaccine dose increased SARS-CoV-2 antibodies in those with incomplete responses after initial series.

292 Predictors Of Seroconversion Following COVID-19 Vaccination

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RATIONALE: It is critical to identify the risk factors associated with lack of seroconversion following COVID-19 vaccination. Here we sought to identify the demographic and clinical characteristics associated with a negative spike antibody response after completion of a SARS-CoV-2 vaccination series.

METHODS: Demographic and clinical data were collected from subjects who had a validated antibody assay against the SARS-CoV-2 spike protein >=14 days after completing their COVID-19 vaccination. Groups with a negative (<0.4 U/mL) versus positive (>=0.4 U/mL) anti-spike antibody responses were compared with chi-square or Kruskal Wallis tests, as appropriate, with p-values <0.05 considered as statistically significant.

RESULTS: Among 805 subjects, 622 (77.3%) attained seroconversion. Lower likelihood of seroconversion was noted for male sex (72.6% vs 81.5%, p=0.003), older age (median 68.5 vs 66.7 years, p=0.02), a previous history of transplant (70.6% vs 79.7%, p=0.006), or immunocompromised diagnosis (70.2% vs 86.2%, p<0.0001). Comorbidity score as measured by the severity weighted Charlson index was lower for those who seroconverted (median 3 vs 4, p=0.0007). Interestingly, a history of pre-vaccination COVID-19 was not significantly associated with a higher likelihood of seroconversion (15/17 [88.2%] patients with history of COVID-19 seroconverted, vs 607/788 [77.0%] with no COVID-19 history, p=0.28). Finally, of the 20 patients in our cohort that had a COVID-19 breakthrough infection >=14 days post-vaccination, only 6 had a negative anti-spike antibody response.

CONCLUSIONS: Here we have identified several demographic factors and comorbidities that are associated with a lower likelihood of seroconversion following COVID-19 vaccination. These results might help prioritize additional vaccination efforts.

293 Outcomes from New Consultations to Allergy Clinic for COVID-19 Vaccine Concerns

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RATIONALE: The rapid mobilization of COVID-19 vaccination created an influx of new consults to the Allergy and Immunology clinic. Our University-based Allergy and Immunology clinic utilized an electronic consult (e-consult) mechanism to manage the volume of requests. We sought to determine the vaccination outcomes following referral to the Allergy and Immunology clinic.

METHODS: In an IRB-approved protocol, the electronic medical records of 205 new patients referred to the Allergy and Immunology clinic between January and March of 2021 were accessed to evaluate the patient demographics, reason for the consult (concern for risk of reaction versus reaction to a vaccine dose), symptoms and timing of reaction (if applicable), advice provided, and outcome of whether vaccine received and any adverse effects.

RESULTS: The majority of patients referred were female (91%). The most common concern was potential risk of reaction (59%). Of these patients, 33% had concerns due to medication allergy and 27% had a history of other vaccine reaction. 89% subsequently received or planned to get the COVID-19 vaccine following the referral. Of patients experiencing an adverse reaction to the first COVID-19 vaccine dose, 91% subsequently received or planned to get the COVID-19 vaccine following advice from the referral. Vaccine status was not available on follow-up for 7% of referrals.

CONCLUSIONS: Given the importance of fully vaccinating the entire population, referral to the Allergy and Immunology clinic helped at least 90% of its patients receive the next dose of COVID-19 vaccine.